



Gp # 3736

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#8/  
RESPONSE

Applicants: Beebe et al. )  
Serial No.: 09/289,137 )  
Filed: April 8, 1999 )  
For: MICROFLUIDIC EMBRYO )  
AND/OR OOCYTE HANDLING )  
DEVICE AND METHOD )  
Group Art Unit: 3736 )  
Examiner: B. Szmal )

I hereby certify that this paper is being deposited with the United States Postal Service as FIRST-CLASS mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on this date.

9/5/00

Date  
F-CLASS.WCM  
Appr. February 20, 1998

Registration No. 35132  
Attorney for Applicant

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RESPONSE A

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

This is in response to the office action dated June 2, 2000.

Claims 1-22 stand rejected under 35 U.S.C. § 103 in view of Gordon and Dunlay et al. The rejection is respectfully traversed because the rejection fails to accurately account for the content of the references, because the rejection fails to account for important claim features, and because the rejection fails to account for the examiner's burden of presenting evidence to support an obviousness rejection.

The first important mistake in the interpretation of the prior art is the examiner's statement that Gordon discloses a method and apparatus having "an embryo network having a biological medium for movement of the embryos." In Gordon, there is no such provision of a biological medium which moves embryos. Instead, embryos are manually placed into the chamber 4 as shown in FIG. 2, where they then remain. This is described, for example, in column 5, beginning at line 5. Once placed within a chamber 4, the embryos remain within the chamber. Gordon explicitly states in column 4 that "The oocytes to be fertilized are manually placed into oocyte chambers, for example by micropipetting as is normally used to load eggs for standard insemination. The oocyte chambers are sized for the particular species of oocyte to be fertilized. In order to avoid damage to the oocyte and yet obtain efficient fertilization, the volume of the chamber is generally from 800 to 2,000% of the volume of the oocyte. A suitable chamber size for use with a number of species, including man, has dimensions of  $200\ \mu$  Diameter  $\times$   $400\ \mu$  depth." Thus, not only are the embryos or oocytes not moved in the Gordon patent, the chambers in which the oocytes are placed do not correspond in size to the microchannels which are claimed and which, for example, in claim 1, facilitate simulated biological rolling and slipping. As stated on page 5 of the instant specification, it is a height up to about 3 times the diameter of an embryo in the channels of the invention which induced rotating as the embryo is moved by a fluid. Dunlay is complete unrelated to the subject of the claims and fails to fill in any gaps in the teachings of Gordon as compared to the present claims.

The first full paragraph of page 3 is a rambling statement of obviousness without a single citation to evidence to support the conclusions therein. Accordingly, it fails to apply the obviousness statute. Important features are cited and concluded obvious without any statement of their teachings in the prior art. One example is “it would have also been obvious to have capillary induced fluid flow to generate the turbulent flow that causes the movement and rotation of the embryo.” Another example is, “it would also have been obvious to include biological rotation and slipping since those actions occur while the embryo is traveling through the fallopian tubes.” The latter statement could only be borrowed from the present specification, and the former statement lacks even any attempt to cite evidence. This is wholly improper. The entire collection of prior art made of record in this application demonstrates a complete failure of artisans to attempt any simulated biological rolling and slipping as is accomplished in the present invention as claimed. If it were obvious to recognize that biological rotating and slipping as in fallopian tubes is beneficial, and means to accomplish the same are therefore also obvious, then the examiner should be able to find prior art to support that position. Presently, there is absolutely no prior art to support this conclusion. Nor is there an attempt to cite to any prior art which remotely suggests this conclusion. Accordingly, these conclusions in a rambling statement of obviousness are wholly improper.

For all of the above reasons, applicants submit that the application is now in condition for allowance and respectfully request notice of the same. Should the examiner believe that any outstanding issues exist, the examiner is invited to contact the undersigned attorney at the below-listed number.

Respectfully submitted,

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By



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September 5, 2000

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